

in an $\Omega = 1$ Universe. A Harrison-Zeldovich spectrum, $n = 1$, predicted by inflationary models does not have enough power on the 5000 km s^{-1} scale.

MULTI-DIAPHRAGM PHOTOELECTRIC PHOTOTOMETRY OF SPHERICAL GALAXIES¹

Mariângela de Oliveira-Abans^{2,3,4},
Ronaldo de Souza³, and Max Faúndez-Abans^(4,5)

Sixteen "spherical" galaxies, of types E0 and S0, have been observed with a photoelectric detector and *BVR* filters (Kron-Cousins) employing several diaphragms: ESO 295-0010, NGC 641, NGC 676, NGC 1379, NGC 1399, NGC 2073, NGC 2986, NGC 3305, NGC 5898, IC 4704, NGC 6841, NGC 6855, NGC 7144, NGC 7145, NGC 7213, and NGC 7736. Two sets of diaphragms have been used, one on the 60-cm telescope, and another on the 1.6-m one. The objects were selected from a sample of spherical galaxies with $b/a \geq 0.8$ and $(b - a) < 0.2$, prepared by de Souza & Telles (unpublished). The atmospheric extinction correction and calibration have been done simultaneously following the precepts of Harris et al. (1981, PASP, 93, 507). There have been obtained: integrated magnitudes and colors, mean surface brightness, and the photometric diameter D_n . When available in the literature, other authors' V data agree well with this work. Based on an integrated form of " $r^{1/4}$ law" —the relation between the surface brightness and the projected radial distance for normal elliptical galaxies (de Vaucouleurs 1962, Problems of Extragalactic Research, IAU Symposium 15, 3)—there have been inferred the effective radii, and total magnitudes and colors. Estimates of absolute magnitudes, corrected for the redshift effect and galactic extinction, are also presented; the velocities relative to the Galactic system of reference have been extracted from the RC3. A value of $H_0 = 50 \text{ km s}^{-1} \text{ Mpc}$ is adopted.

¹ Observations made at the Laboratório Nacional de Astrofísica, SCT/CNPq/LNA, Brasópolis, Brazil.

² Astrophysics Group, Pontificia Universidad Católica de Chile.

³ Instituto Astronômico e Geofísico, Universidade de São Paulo, Brazil.

⁴ On leave from the Laboratório Nacional de Astrofísica, Brazil.

⁵ Universidad de Santiago de Chile.

SEARCH FOR STRUCTURES IN THE COSMIC MICROWAVE BACKGROUND RADIATION

Angélica de Oliveira Costa and Thyrso Villela
Instituto de Pesquisas Espaciais, Brazil

We apply a method to search for fluctuations in the cosmic microwave background radiation based on the assumption that such fluctuations can be described by a random Gaussian field. We used a map at 3.3 mm wavelength with beam size of 7° (FWHM). Although two regions, one hot and another cold, have been detected in the data set at 2σ (or 95.45% of C.L.), they cannot be considered as hot or cold spots because both structures were smaller than the region covered by the beam size.

OBSERVACIONES DE LENTES GRAVITACIONALES CON EL TELESCOPIO HUBBLE

Emilio E. Falco

Harvard-Smithsonian Center for Astrophysics, U.S.A.

En colaboración con E. Turner y grupos en Harvard, MIT, Princeton y Caltech, hemos realizado observaciones de sistemas de lentes gravitacionales conocidos y de fuentes con probabilidad relativamente elevada de pertenecer a sistemas de este tipo. Entre los primeros se encuentran sistemas de imágenes dobles y cuádruples y de "anillos"; entre los segundos se encuentran todos los cuasares con desplazamiento al rojo mayor que 4.5. Utilizamos la cámara PC en bandas visuales y rojas, y observamos un total de 26 fuentes. Presento resultados parcialmente positivos en los casos de los sistemas con imágenes cuádruples, 1413+117 y MG0414+0534. Las limitaciones del sistema óptico del Hubble no nos permiten detectar la lente en estos casos, pero sí nos permiten identificar centroides de las imágenes con gran precisión. Contamos con mejorar los límites, o detectar las lentes con observaciones futuras de mayor duración efectiva. Los resultados de nuestra búsqueda de nuevos sistemas de lentes gravitacionales fueron negativos. Las limitaciones del telescopio no nos permiten obtener límites restrictivos para la existencia de imágenes múltiples en nuestras observaciones de tipo de relevamiento de fuentes.